

Lecture 12.2

The industrial organization of crime

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Today

Personnel economics of the criminal firm

- A Chicago drug gang

- Gangs of Medellin

- Pirates!

- Traffic police

- Political manipulation

Interventions & program evaluation

- Dell on crackdowns

- Anti-gang governance in Medellin

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Internal organization of armed groups

- ▶ All armed organizations need to:
 - ▷ Recruit committed cadres who will not defect to authorities
 - ▷ Develop internal mechanisms of performance management
 - ▷ Prevent internal predation and conflict
 - ▷ Minimize coup risk
- ▶ The clandestine and illicit nature of these groups and contracts makes them interesting
 - ▷ May also be necessary to quell and regulate these organizations
- ▶ The main limitation on studying this topic is the unobservability, secrecy, and violence of these organizations and activities

Levitt & Venkatesh *QJE* 2000 analysis of a Chicago gang

- ▶ Uncommonly deep access to a defunct drug-selling gang, including financial records & conflict data
- ▶ Some fascinating observations:
 - ▷ Street-level sellers earn minimum wage
 - ▷ 7% death rate per year
 - ▷ High-level gang members earn far more than their legitimate market alternative
- ▶ Consistent with a tournament-style labor market

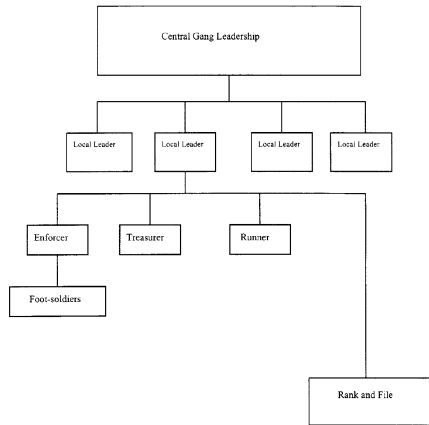


FIGURE I
Organizational Structure

These stylized facts and interpretation have been tremendously influential

- ▶ Despite fact that
 - ▷ N=1 gang that failed
 - ▷ Authors note that the gang's competitors are organized differently
 - ▷ Authors express doubts over tournament model, speculating that non-pecuniary incentives are also important
- ▶ Other studies suggest wide variation in gang organization over time and space
 - ▷ e.g. Sanchez Jankowski (1991), who randomly sampled gangs in New York, L.A., and Boston and spent a decade as a participant observer in 37, documenting internal organization and governance

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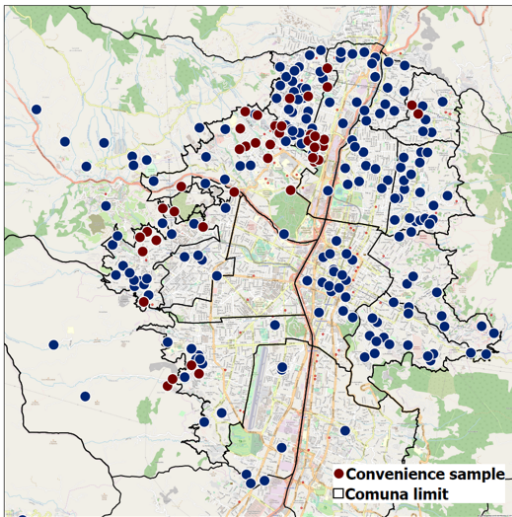
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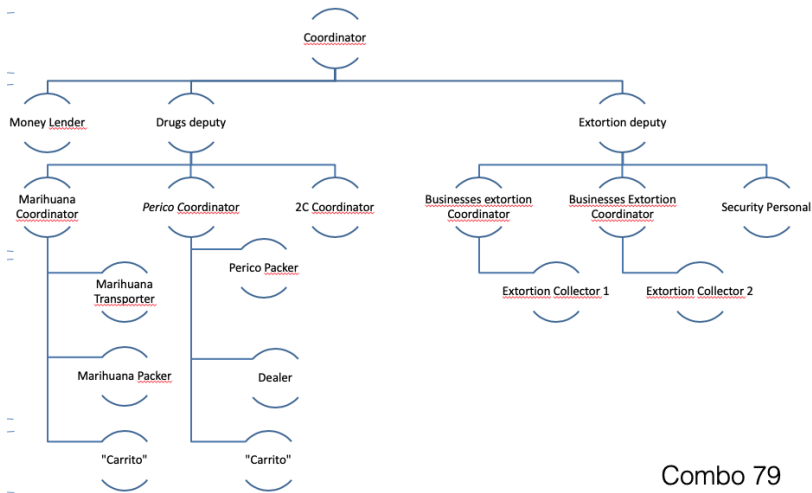
Anti-gang governance in Medellin

A convenience sample of combos



- ▶ Building a census of combos based on existing lists plus expert interviews and investigations
- ▶ Qualitative data on about 40 groups
- ▶ In-depth description on a convenience sample of 10 combos
 - ▷ Attempt to interview 1-2 members or leaders + an outside expert (community member, intelligence operative, etc)
 - ▷ Collect information on boundaries, business lines, organizational structures, earnings, etc.

Most combos are hierarchical organizations, 20-40 members, headed by a “coordinator”, organized by business line

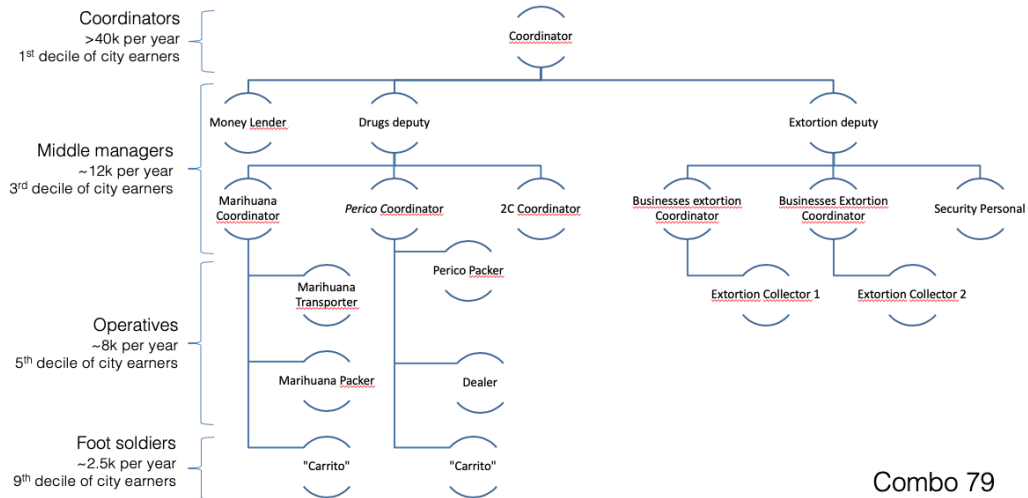


Combo 79

Combo members are both employees of the firm and independent entrepreneurs (performing “conspires”). Why?

Good/service	Combo (usually local monopolies)	<u>Razón</u> (less territorial services)	Conspires (outside the “firm” as independent entrepreneurs)
Illicit good monopolies	Drug retailing	Drug wholesaling	In at least one case, city-wide supply to razones
Extortion/protection	Local businesses; (Rarely) local households; Some external businesses (buses)	Large firms and construction projects	Local business no; Sometimes large external businesses and buses
Coercive services	Contract killings, debt collection, loan sharking	Contract killings, debt collection, large loan sharking services	Sometimes
Legal good monopolies	Licensing sale of small consumer goods	Negotiating sale of certain goods (gas canisters) between city-wide suppliers	Typically yes (e.g. rafles, liquor sales)
Others	Larceny, governance (e.g. dispute resolution)	Money laundering, in some cases international drug trafficking	Typically yes (e.g. larceny outside the combos' territory, prostitution)

Broadly speaking, these are well-paid positions



Combo 79

Variation across combos (in progress)

		Combo 79 (1)	Combo 130 (2)	Combo 338 (3)	Combo 351 (4)	Combo 416 (5)	Combo 203 (6)	All combos (7)
Coordinators	Mean	-	\$77,144.2	\$99,833.6	-	\$317,652.4	\$36,303.1	\$97,240.5
	S.D.	-	\$0.0	-	-	-	-	\$100,445.6
	Obs.	-	2	1	-	1	3	7
Middle managers	Mean	\$11,042.2	\$15,882.6	\$5,445.5	\$13,613.7	\$215,549.8	-	\$49,504.3
	S.D.	\$7,265.4	\$0.0	-	\$3,850.5	\$144,394.8	-	\$94,052.8
	Obs.	3	3	1	2	2	-	11
Drug & extortion operatives	Mean	\$7,495.5	\$7,442.1	\$9,438.8	\$4,084.1	\$34,689.7	\$11,036.2	\$20,265.6
	S.D.	\$5,122.7	-	\$4,416.5	\$1,014.7	\$22,074.6	\$6,231.8	\$20,489.1
	Obs.	17	1	3	5	27	5	58
Foot soldiers	Mean	\$3,267.3	\$1,452.1	\$2,541.2	\$2,995.0	\$14,273.7	\$1,361.4	\$10,043.0
	S.D.	\$0.0	-	-	\$2,182.0	\$413.7	-	\$5,620.9
	Obs.	8	1	1	2	22	1	35

Total observations 111 (accounting for frequency weights)

Benchmark 1 \$562.7 (average yearly income for the first decile of the city earners)

Benchmark 2 \$7,515.7 (yearly income for formal employees earning the minimum salary)

An additional 10-15% of young neighborhood men are “helpers” or “social members”, not counting licensees

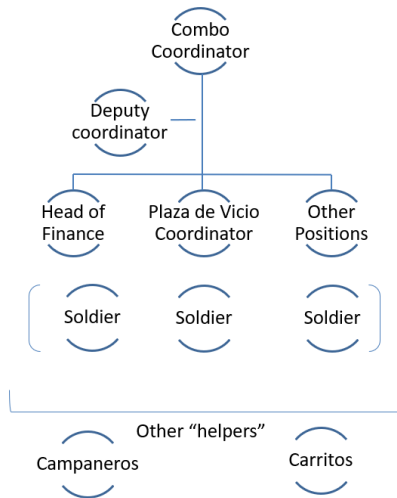
Licensed entrepreneurs &
“public employment”

Arepa sellers

Egg sellers

Shot sellers

Microfinance



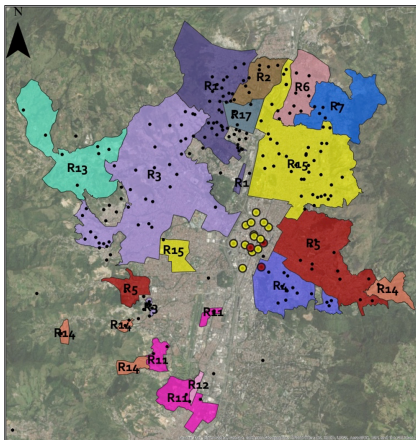
Social members

Siblings, cousins

Party-goers

Drug buyers, users

Another direction: Why variation in horizontal and vertical integration?

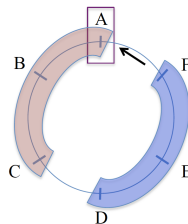
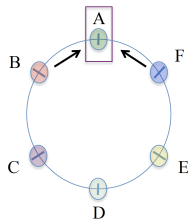


- ▶ Most combos are autonomous from razones, and most are <40 members
- ▶ Two razones have vertically integrated their combos
- ▶ Economies of scale / integration
 - ▷ Price cartels
 - ▷ Mitigating intra-group violence
- ▶ Diseconomies of scale / integration
 - ▷ Ease of prosecution
 - ▷ Information problems and the make-or-buy decision
 - ▷ Lack of management expertise

IO of armed groups generally underexplored and theorized

Exception: Bueno de Mesquita (2018) model of territorial control & violence

- ▶ Advantage to market size is ability to charge monopoly prices far from (competitive) borders
 - ▷ Thus returns to territorial conflict increasing in local market size
- ▶ Can map economic shocks in one territory to spillovers in other territories as well as probabilities of violence
 - ▷ Factionalization leads to more frequent, less intense violence
- ▶ Other economies and diseconomies not modeled
- ▶ Also, does not fit observed market structure and pricing of drugs
- ▶ Per usual, challenge is lack of empirical data and stylized facts on which to build models



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Gangs of Medellin

Pirates!

Traffic police

Political manipulation

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Another example of how inputs and observability shape organizations: Merchant versus pirate ships (Leeson 2007)

Merchant ships

- ▶ K-intensive voyages need investors
- ▶ Problem: Absentee owners cannot monitor crew
 - ▷ Crew can shirk, embezzle, damage cargo, fail to defend, or even steal vessel itself
- ▶ Made captains autocrats on the ship
- ▶ To align captain interests, owners:
 - ▷ Hired family
 - ▷ Paid captain both wages and shares in profits
- ▶ Led to coercive, predatory treatment of crews
 - ▷ Constrained partly by reputations
 - ▷ Drove many crew to join pirates

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Pirates

- ▶ Less capital intensive than long-distance trade
- ▶ Rather, plundering required crew effort
- ▶ Ship was often jointly owned by crew
- ▶ But still needed captains for efficient organization
- ▶ How to avoid predatory captains?
 - ▷ Democratic elections
 - ▷ Separation of powers across roles
 - ▷ Written constitutions
 - ▷ Captain's lodging, provisions, and pay often equal to that of crew
- ▶ “Constitutions” also provided rule-based incentives to deter shirking

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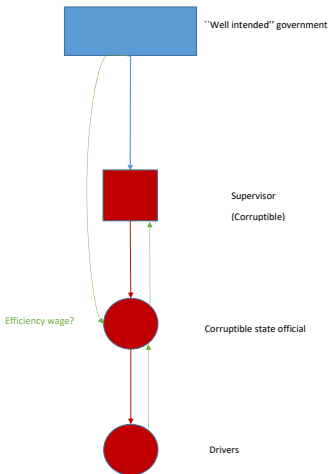
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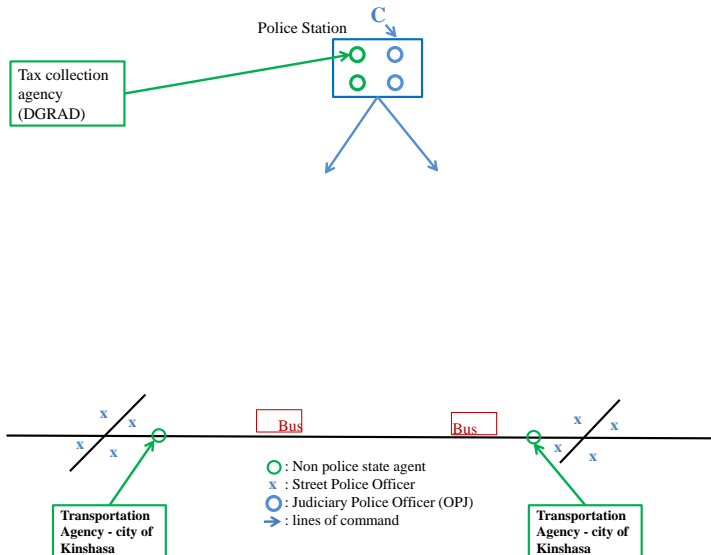
Sanchez de la Sierra & Titeca 2021: Corruption in hierarchies



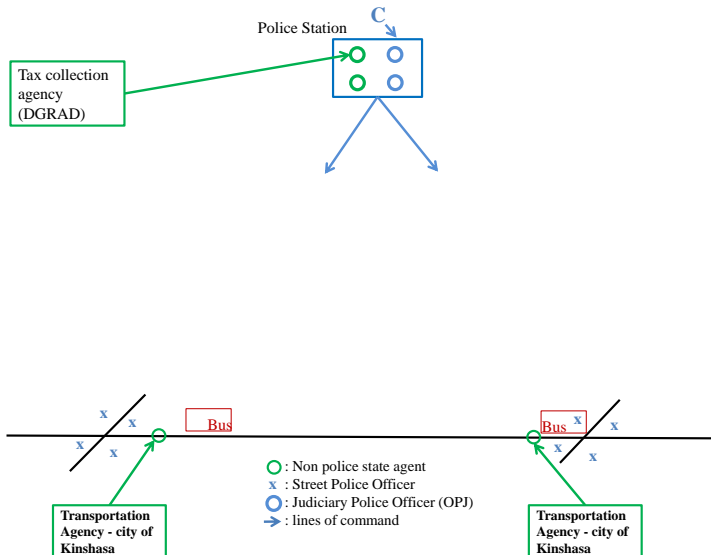
Why should a street cop be residual claimant on bribes?



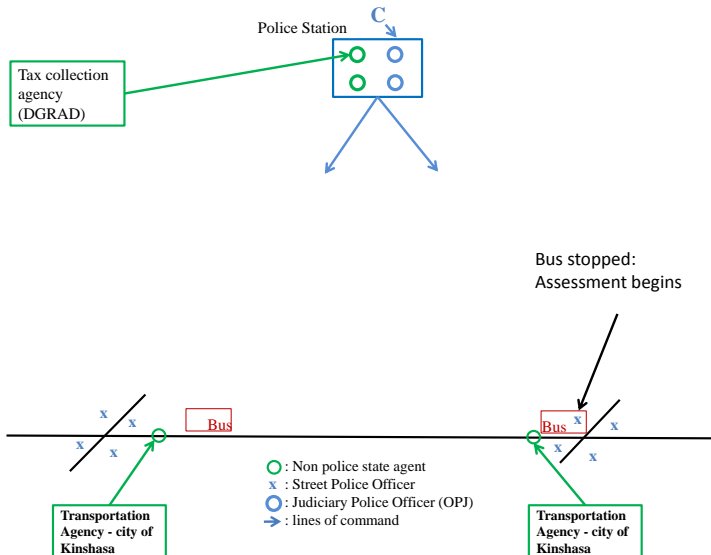
Corrupt hierarchy, illustrated



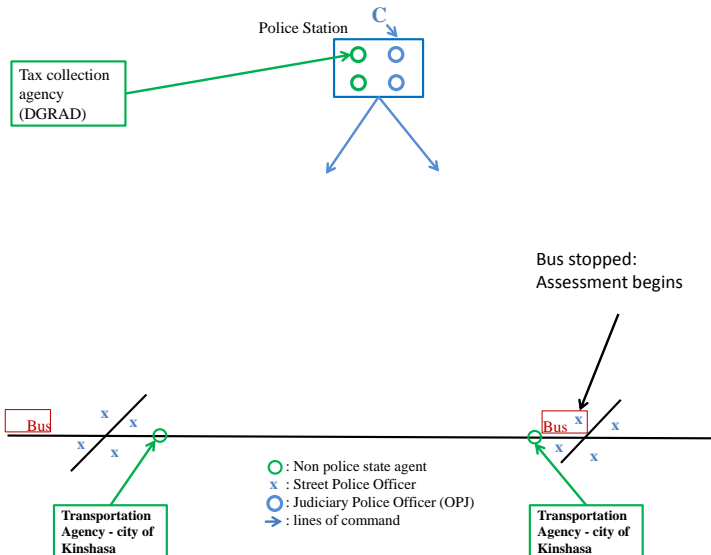
Corrupt hierarchy, illustrated



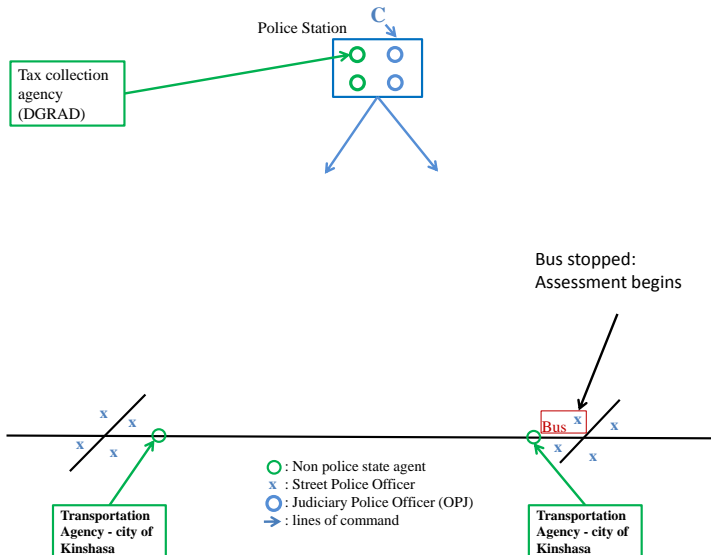
Corrupt hierarchy, illustrated



Corrupt hierarchy, illustrated



Corrupt hierarchy, illustrated



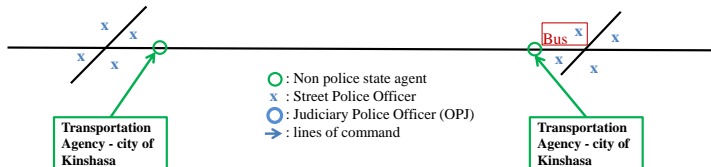
Corrupt hierarchy, illustrated



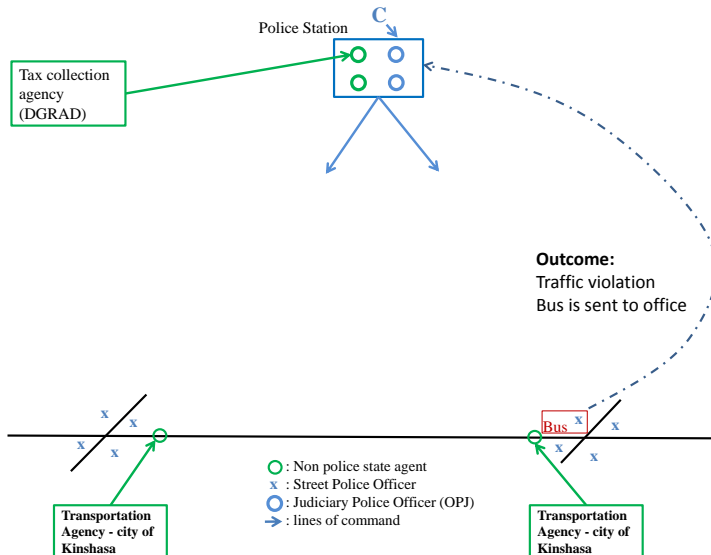
Outcome:

Traffic violation

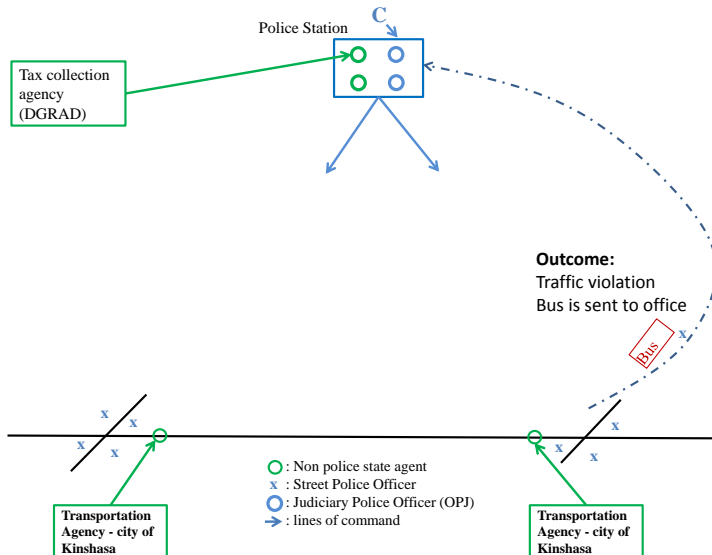
Bus is sent to office



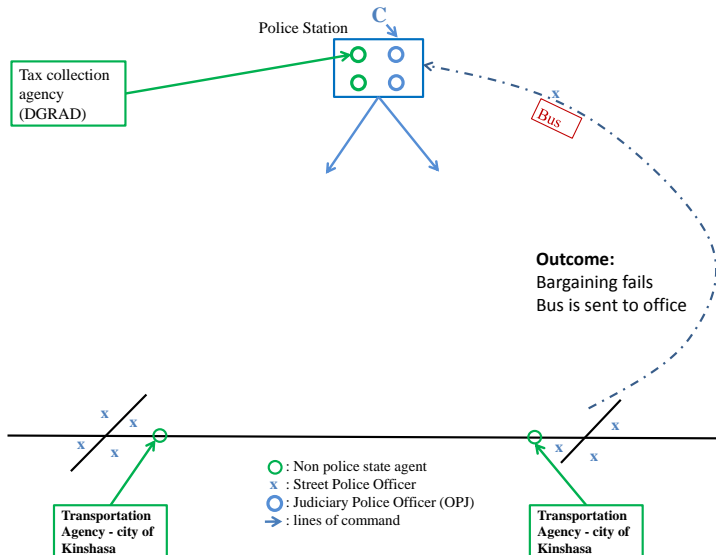
Corrupt hierarchy, illustrated



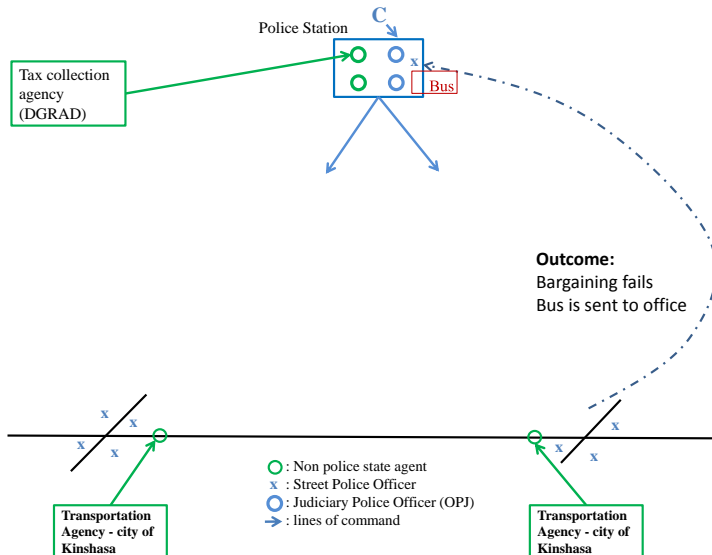
Corrupt hierarchy, illustrated



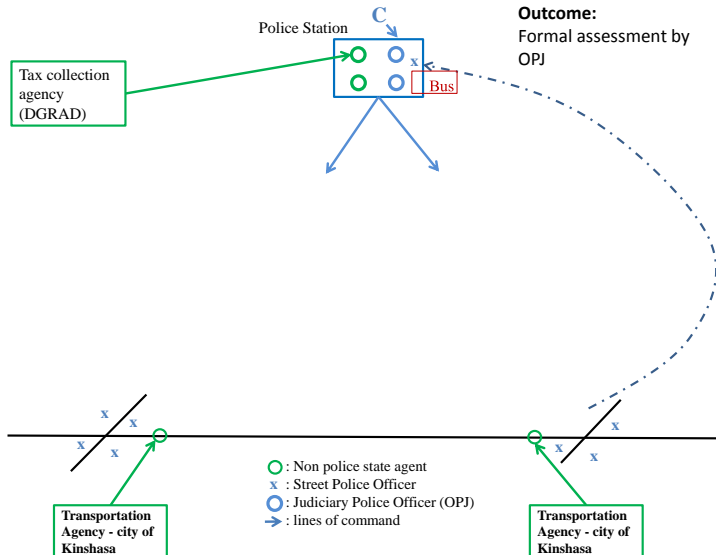
Corrupt hierarchy, illustrated



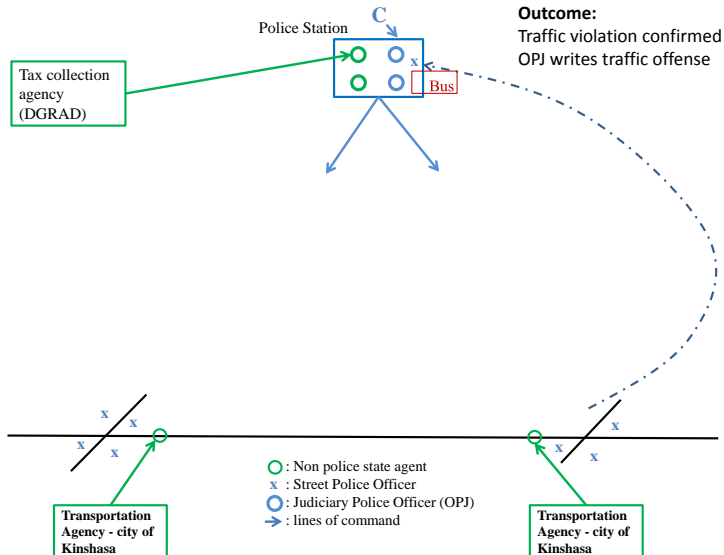
Corrupt hierarchy, illustrated



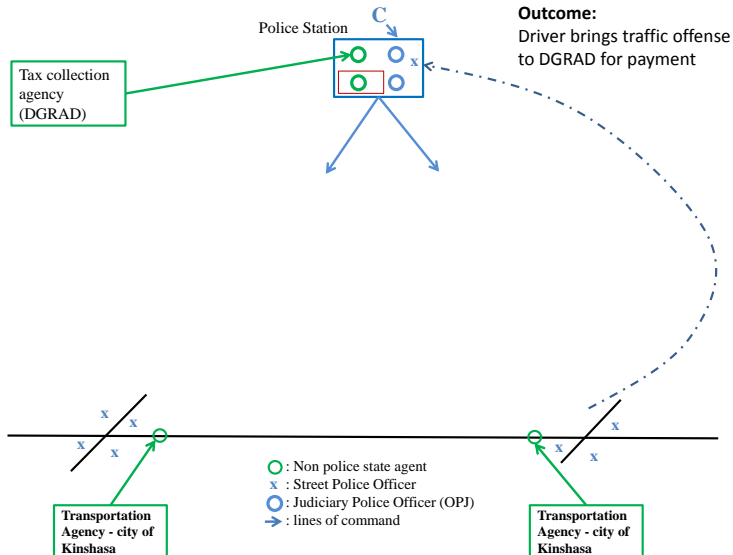
Corrupt hierarchy, illustrated



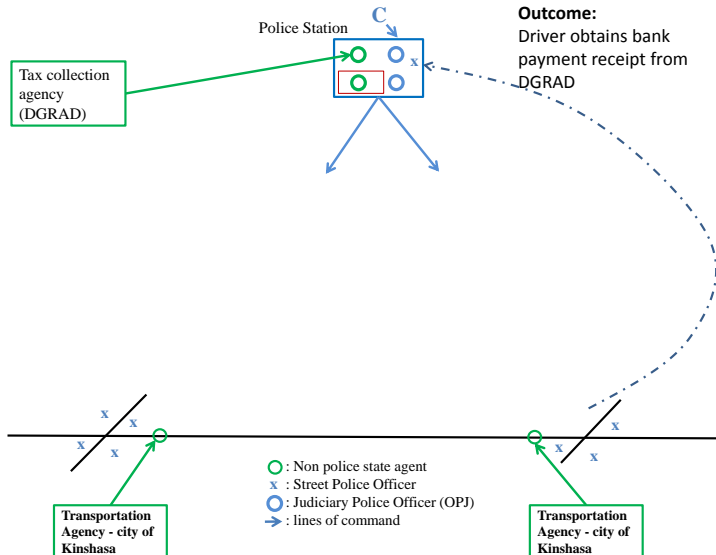
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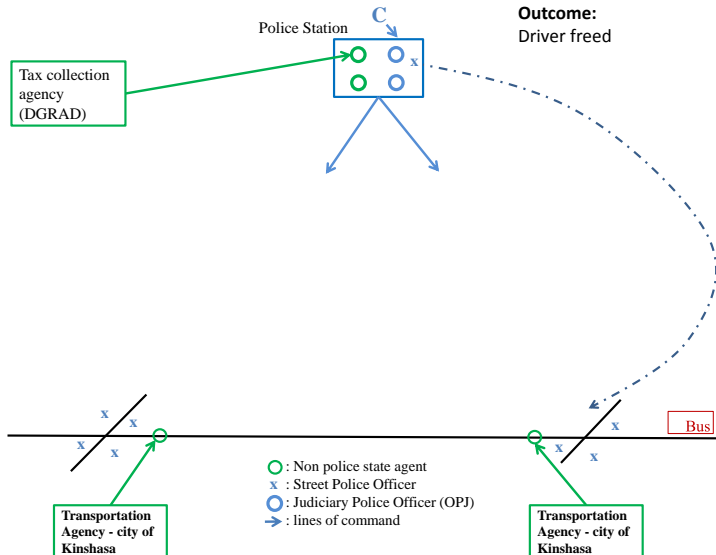
Corrupt hierarchy, illustrated



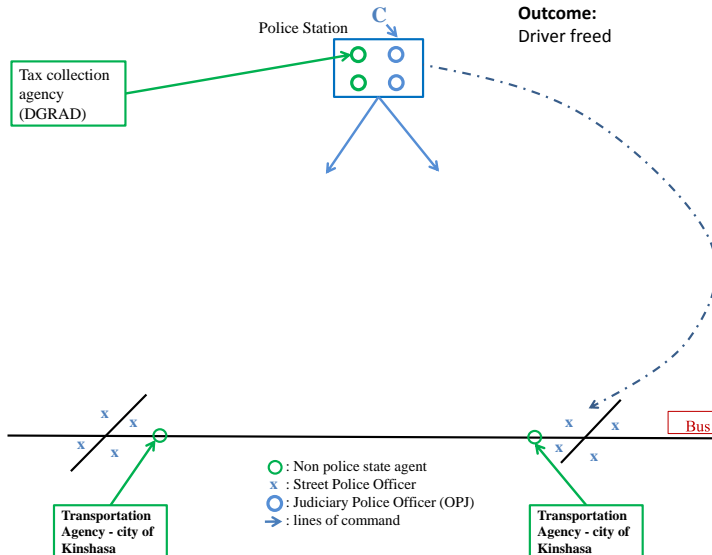
Corrupt hierarchy, illustrated



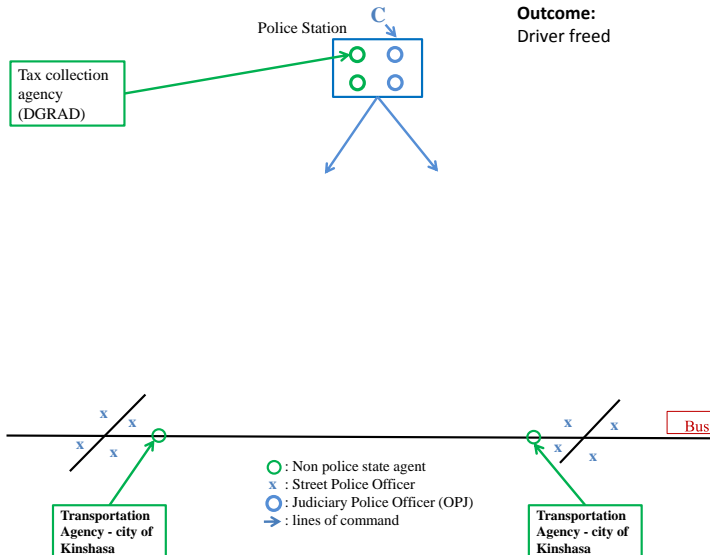
Corrupt hierarchy, illustrated



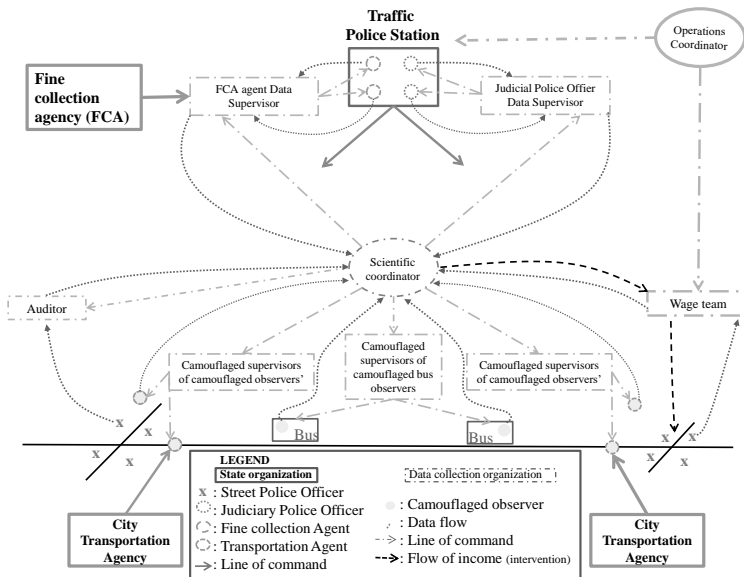
Corrupt hierarchy, illustrated



Corrupt hierarchy, illustrated



Corrupt hierarchy: data



Sanchez de la Sierra & Titeca's quantitative contribution

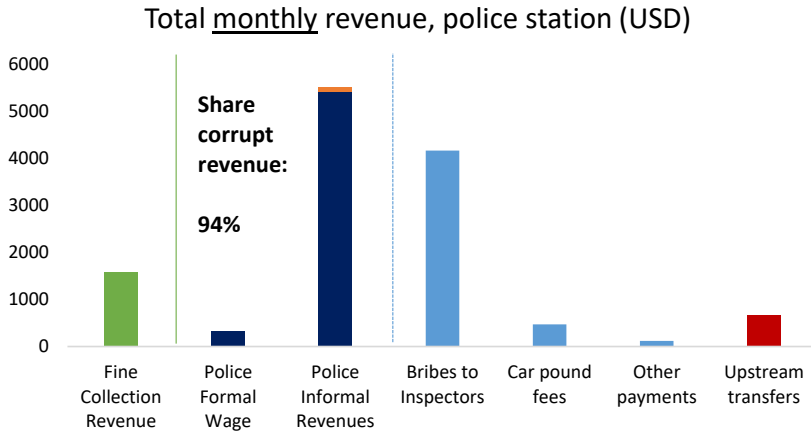
► Experiments

1. Transitory income shock to officers (morning cash payment)
2. Compensate supervisors for a public reduction in daily quotas

► Empirics bear our predictions of a model

- ▷ Increasing street police pay reduces bribes taken, but $1/3$ captured by supervisor
- ▷ But now police agents less likely to show up to intersection and congestion worsens

Is this gang-like? Or simply a case of tax farming?



Easy to ex post see the logic of this system, but there are some puzzles?

- ▶ One puzzle: Why organize in this fashion, where the street officer physically brings cars to the station?
 - ▷ Supervisors appear to have superior bargaining power to fine drivers
 - ▷ Unclear why drivers don't increase bribe to avoid supervisor
 - ▷ Possibilities:
 1. Information asymmetry, where drivers don't know ex ante the bargaining superiority of supervisors
 2. Bribe extraction is hard to do, and highly uncertain. Street police have a hard time convincing their supervisors that they tried hard enough. Easier to let supervisor try directly.
- ▶ Another puzzle: This is a very unusual equilibrium – why are there only about 100 traffic police in a city of millions?
 - ▷ If this is so efficient why hasn't it expanded

A case for “economic ethnography” and descriptive analysis

- ▶ Systematic, methodologically “rigorous” qualitative data collection & analysis aims to reduce common forms of bias
 - ▷ Especially tendency to extrapolate from small samples and salient examples
 - ▷ Crime and development economists already to do a lot of *informal* qualitative work
 - ▷ Optimal amount of more systematic qualitative work should probably not be 0%
- ▶ Informed by theory and also helping to generate theory
 - ▷ This is chief difference from most non-economics ethnography, which tends to be quite critical of economic reasoning and models

Some themes emerging

- ▶ Rent distribution and relative bargaining power in criminal hierarchies
 - ▷ e.g. Combos versus razones, Cops versus supervisors, Pirates versus merchant ships
 - ▷ Question: What factors shape relative bargaining power
- ▶ Importance of deterring market entry, maintaining local monopolies
 - ▷ Could account for cross-city differentials in gang earnings
 - ▷ Thus no one answer to the wages of crime
 - ▷ May also help explain political distortions

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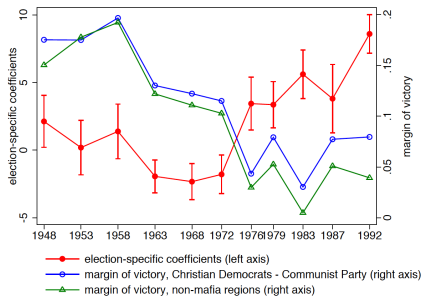
A common theme: The use of corruption and violence to subvert democracy and state strength

- ▶ Distort public goods investment and undermine public goods quality (Barone & Narciso 2015)
- ▶ Violent lobbying: Bribe or threaten politicians to weaken criminal enforcement (Acemoglu et al 2013, Dal Bo & Di Tella 2003, 2006)
- ▶ Reduce political competition
 - ▷ Pre-election violence to repress turnout or intimidate disfavored politicians
 - ▷ Like parties, may use post election violence and ethnic cleansing as a “redistricting” tool (Kasara 2016)
 - ▷ Creates an electoral violence cycle (Alesina et al 2016)

Alesina et al 2016

Effects of mafia on electoral violence rising in electoral competitiveness

Figure 5: Electoral violence, by election

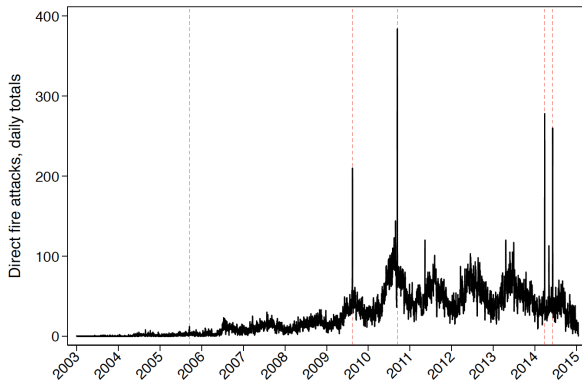


Differential effect of the electoral cycle on homicides in mafia regions relative to non-mafia regions, and the differential between the voting share of the Christian Democrats and the Italian Communist Party

Parallels to insurgency literature

Condra et al forthcoming *AER*

Figure 1: Daily Direct Fire Attacks, 2003 to 2015. Dashed red lines represent election dates.



Time and place of violent acts is coordinated to maximize vote suppression while minimizing actual civilian deaths (to avoid backlash)

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Beginning to see a growing number of experimental and non-experimental anti-gang programs

- ▶ Ferraz et al 20??, Magaloni et al 2015: Police pacification of Rio's favelas
 - ▷ Occupation and presence of the police decreased violent crime only so long as police presence remained
- ▶ Blattman et al 20??: Experimental attempts to reduce gang governing presence, recruitment
 - ▷ Can intensive government displace gang-provided public goods (security, justice, regulation)?
 - ▷ What are the incentives motivating young men to join risky occupations? Status? Poor information on death risk? What are the marginal responses to changing these?

Parallels to quasi-experimental studies of counterinsurgency techniques

- ▶ Insurgents parallel criminal groups in their use of violence, their reliance on secrecy, and the importance of civilian collaboration
- ▶ A number of studies have grown out of massive data sharing by local governments and US military in Philippines, Iraq, Afghanistan
 - ▷ Berman et al 2011 *JPE*: Effects of US reconstruction spending on levels of violence in Iraq
 - ▷ Crost et al 2014 *AER*: RD of development program on conflict causalities

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Dell 2015: Impact of crackdowns on violence & trafficking

Including spillover effects through cost-minimization over road network

Figure 1: Illustration of Spillovers Methodology

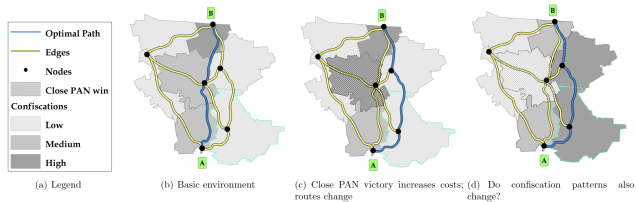
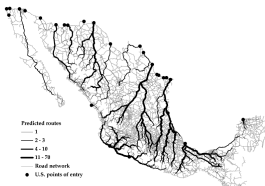


Figure 2: Road Network and Predicted Trafficking Routes



Notes: The least cost routes plotted in this figure are predicted using the network model with congestion costs.

What made this paper stand out?

What made this paper stand out?

- ▶ The first rigorous study of crackdowns – probably the most common policy response
- ▶ Attention to spillovers (whack-a-mole)
 - ▷ Technocally sophisticated
 - ▷ Also, arguably, *the* single most important policy parameter
 - ▷ A long history in criminology of minimizing adverse spillovers from policing interventions (e.g. Blattman et al 2019)
- ▶ Identification of alternate routes
 - ▷ An early use of (then) new computer science methods

Comments & limitations

Comments & limitations

1. We don't know what the treatment is
 - ▷ No direct measure of crackdowns
 - ▷ What other PAN-specific policies come as part of a PAN mayor?
 - ▶ This is the oft-forgotten identification concern with any policy intervention: The package problem
2. What is the LATE in this RD? Why might it be different from ATE of all crackdowns?

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2. What is the LATE in this RD? Why might it be different from ATE of all crackdowns?

- ▷ Post-inauguration period — maybe this is short-lived "out-of-equilibrium" violence
 - ▶ i.e. $LATE = ATE$ but ATE of crackdowns is short-lived
- ▷ Occurs at the beginning of an historically unprecedented federal crackdown/war on cartels
 - ▶ $LATE > ATE?$ $< ATE?$ Depends on specific nature of federal policy
- ▷ Are politicians in close elections different? Will they act differently?

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 - ▷ Are politicians in close elections different? Will they act differently?
3. Only calculates routes for *domestically-produced* illicit goods, not cocaine trafficking!
 - ▷ Hard method to use when trans-shipment routes do not have known, fixed points of origin?
 - ▷ Does this simply add noise to spillover estimates? Or a more serious identification concern?
 - ▷ External validity: do we think violence around pill/marijuana is different than for cocaine?

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Recall: The problem

Figure 2. Relationship between combo governance and combo legitimacy

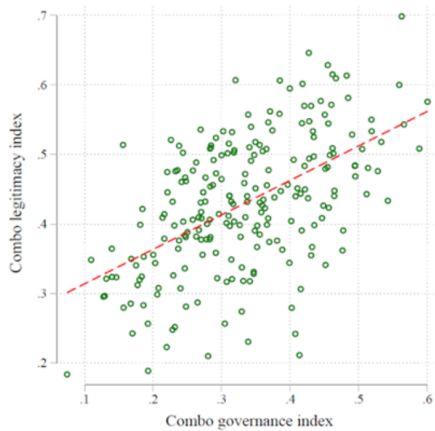
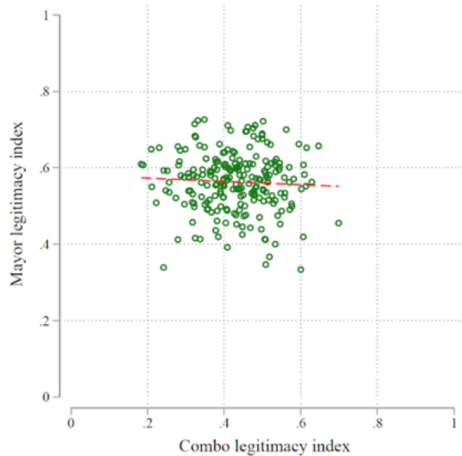


Figure 3. Relationship between combo legitimacy and state legitimacy



What to do? Identified an existing program to scale

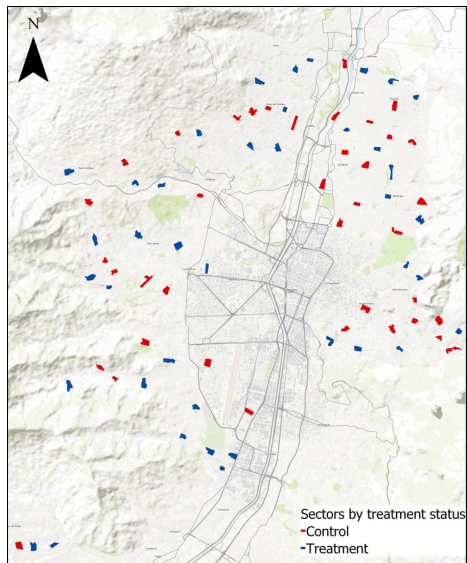


- ▶ Most city interventions have been violent crackdowns by police
- ▶ In one neighborhood, from 2012-18, the city tried to displace combos from governing by raising the number of street-level staff and improving services
- ▶ How elastic are citizen loyalties and use of state services to presence of the state?

Intensive governing in 40 sectors of 1000-3000 people

- ▶ Organize community improvement efforts (e.g. garbage spot coordination, dog excrement norms)
- ▶ Had quotas for identifying problems in neighborhood and referring the people to city services
- ▶ Organized semi-annual meetings between residents and authorities
- ▶ Provide trainings in dispute resolution and other skills
- ▶ Liaised with the comunas dispute resolution office
- ▶ Broadcast a new police code for dealing with misdemeanors and facilitate police-community interactions

First RCT of a gang-level intervention



Opposite of the intended effect, on average

	Additive Index					
	Control Mean	ATE	SE	P-value	ATE as % of SD	N
	(1)	(2)	(3)	(4)	(5)	(6)
Relative State Governance Index	0.066	-0.028	0.015	0.064	-0.088	2,314
State Governance Index	0.413	-0.017	0.010	0.089	-0.065	2,362
Combo Governance Index	0.345	0.009	0.011	0.414	0.032	2,316

Indications of a heterogeneous treatment effect

Pre-specified, though not as we expected

	Additive Index					
	Control Mean	ATE	SE	P-value	ATE as % of SD	N
	(1)	(2)	(3)	(4)	(5)	(6)
Relative State Governance Index	0.066	-0.028	0.015	0.064	-0.088	2,314
State Governance Index	0.413	-0.017	0.010	0.089	-0.065	2,362
Combo Governance Index	0.345	0.009	0.011	0.414	0.032	2,316
Relative state governance in sectors with						
Above median baseline combo governance	0.015	-0.043	0.020	0.038	-0.135	1,146
Below median baseline combo governance	0.117	-0.014	0.022	0.519	-0.046	1,168
Relative State Legitimacy Index	0.131	0.012	0.019	0.550	0.037	1,845
State Legitimacy Index	0.572	0.012	0.007	0.094	0.060	1,906
Combo Legitimacy Index	0.437	0.002	0.015	0.874	0.009	1,845
Relative state legitimacy in sectors with						
Above median baseline combo governance	0.110	-0.031	0.027	0.265	-0.096	919
Below median baseline combo governance	0.152	0.056	0.026	0.039	0.185	926

Some evidence that this is “failed promise of the state”

Data from treatment sectors only

Figure 11: Relative state governance, baseline and endline by failed state promise index

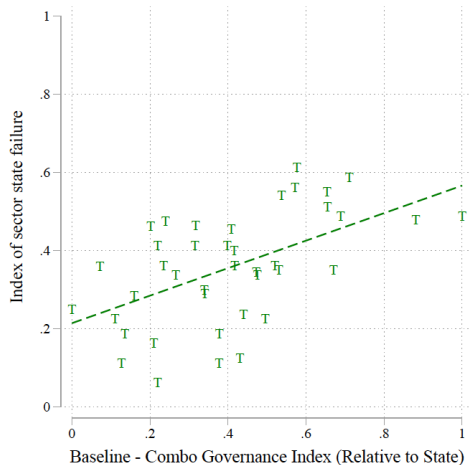
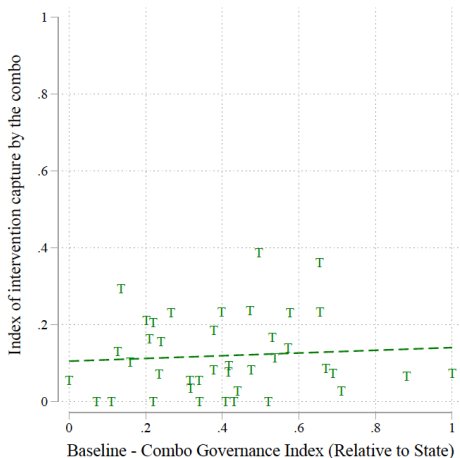


Figure 12: Relative state governance, baseline and endline by combo interventio capture index



Arguably, in one experiment we see the inherent heterogeneity of any “rule” treatment

- ▶ Inherently heterogeneous treatment
- ▶ Depends on what was there before, what the counterfactual is, etc
- ▶ Very difficult to predict the effects of more governance on the margin
- ▶ Akin to theory of second best